

Subcommittee on Geotechnical Asset Management (GAM) – AKG00(1)

<https://trb-gam.weebly.com>

**Wednesday January 6, 2021
4:00 to 5:30 PM – Eastern**

MEETING MINUTES

BUSINESS and ANNOUNCEMENTS (20 minutes)

1. Introduction of Co-Chairs and Deputy-Chairs by Scott Anderson
2. Request to log your attendance with a link.
3. Encouraged use of chat for questions and dialogue. Indicated that the chat will be included in the meeting minutes (included at the end of these minutes).
4. 2020 minutes approved by group.
5. TRB Announcements (Nancy Whiting, TRB)
6. FHWA Update (Silas Nichols/Khalid Mohamed, FHWA)
7. GAM Subcommittee Website: trb-gam.weebly.com (Darren Beckstrand, Landslide Technology, Subcommittee Co-Chair)

2021 Sponsored Sessions (and others relevant) – Noted by Darren Beckstrand

1. Tuesday, January 05, 12:00 PM-01:30 PM ET: Rockfall Management Subcommittee AKG10(1)
2. Wednesday, January 06, 10:00 AM-11:30 AM ET Advances in Landslides, Analysis and Control Subcommittee AKG10(2)
3. **Wednesday, January 06, 04:00 PM-05:30 PM ET: Geotechnical Asset Management Subcommittee AKG00(1)**
4. Friday, January 08, 10:00 AM-01:00 PM ET: Soil and Rock Properties and Site Characterization Committee
5. Monday, January 11, 02:00 PM-05:00 PM ET: Engineering Geology Committee
6. Friday, January 15, 02:00 PM-05:00 PM ET: Geotechnical Instrumentation and Modeling Committee
7. Thursday, January 21, 02:00 PM-05:00 PM ET: Workshop 1021 - Getting the Most Out of Big Data Analytics for All Facets of Transportation Geotechnics
8. Friday, January 22, 02:00 PM-05:00 PM ET: Workshop 1045 - Climatic Impacts on Performance of Road Foundation
9. **Monday, January 25, 02:30 PM-04:00 PM ET: Event 1116 - Geotechnical Asset Management in Action (see authors at the end of this agenda)**
10. Tuesday, January 26, 11:30 AM-01:00 PM ET: Event 1176 - Improving Site Characterization and Reliability with Innovative Laboratory and Field Testing
11. Tuesday, January 26, 01:00 PM-02:30 PM ET: Event 1193 - Geotechnology Accomplishments - A Historical Review and Future Outlook
12. **Thursday, January 28, 10:00 AM-11:30 AM ET: Event 1344 - Climate Change Impacts on Roadway Policies**
13. **Thursday, January 28, 01:00 PM-02:30 PM ET: Event 1383 - Geotechnical Asset Management – How Is It Working Out There? (see authors at the end of this agenda)**

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14. **Thursday, January 28, 04:00 PM-05:30 PM ET: Event 1418 - Evaluation of Geotechnical Assets through Instrumentation**
15. **Friday, January 29 01:00 PM-02:30 PM ET: Event 1443 - Data Acquisition and Geologic Modeling for Decisions: Network Scale to Site Scale (see authors at the end of this agenda)**
16. Others, as generated, can be entered in the chat?

Prior Business – Discussed by Darren Beckstrand

1. FHWA/AAASHTO TAM Webinar 43: Geotechnical Assets, April 15 2020: [TAM Webinar 43](#)
2. GeoCongress 2020: Short Course - Implementation of Geotechnical Asset Management and Special Session 17 Temporal Forecast GeoRisk Distributed Infrastructure
3. Syntheses published in 2020:
 - a. Advances in Unstable Slope Instrumentation and Monitoring, [NCHRP Synthesis 554](#)
 - b. Estimating and Contracting Rock Slope Scaling Adjacent to Highways, [NCHRP Synthesis 555](#)
 - c. Asset Management Approaches to Identifying and Evaluating Assets Damaged Due to Emergency Events, [NCHRP Synthesis 556](#) (Highlights Oregon’s Unstable Slope Management Program)
4. ACTION: Syntheses awarded and announcement of questionnaires distributed following the meeting: Design Practices for Rock Slopes and Rockfall Management, NCHRP Synthesis 20-05/Topic 52-18
5. Published Legal Study NCHRP 20-06/Topic 24-02, Potential Liability Associated with Unstable Slope Management Programs: Timothy R. Wyatt, Conner Gwyn Schenck PLLC conducted the study. [Download here.](#)
6. Deterioration Rates and Life-Cycle Costs for Geotechnical Assets – Problem Number 2021-D-06 (Ty Ortiz) – **Not Selected** for 2021 National Cooperative Highway Research Program
7. ACTION: NASEM Committee on Geological and Geotechnical Engineering study “Corrosion of Buried Steel” initiated this year and will have a virtual workshop open to the public on March 9-10, 2021. [Information here.](#)
8. TPF-5(459) Pooled fund project “Developing and Calibrating Fragmental Rockfall Models using Physics Engines”, WashDOT Lead state.

Announcements – Discussed by Darren Beckstrand

- GeoCongress 2022, Charlotte, NC, March 20-23, 2022
 - Abstracts Due [Feb 12, 2021](#)
- 2020 13th National Conference on Transportation Asset Management, Boston, MA
 - Postponed to [August 7-10, 2021](#)
- AEG in San Antonio, Texas, September 18 – 26, 2021
- HGS in Tacoma, WA, Aug 16 – 19, 2021 – Abstract submission date soon
- Others as recorded in the meeting Chat

PRESENTATIONS and DISCUSSIONS (60 minutes)

1. Andrew Doe – Australian Rail Track Corporation (ARTC) - Risk based earthworks asset review of Aurizon Rail Network (10 min)
2. Nick Farney (Western Federal Lands) and Eric Bilderback (National Park Service) – Use of the Unstable Slope Management Program for Federal Lands Management Agencies (15 min)

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3. Zac Sala (BGC Engineering) - The use of computer vision techniques in combination with widely available street level imagery for rock slope inventory (10 min)
4. Matt Lato (BGC Engineering) –Change detection at the corridor or network level (10 min)
5. Dave Stanley (DASC) - Alaska's GAM Program - Understanding the Past; Building the Future (10 minutes)

RESEARCH NEEDS STATEMENT IDEA GENERATION SUMMARY (10 minutes)

- Time ran short for RNS discussion, attendees referred to the chat

CLOSURE AND ADJOURNMENT

CHAT LOG

15:59:03 From Darren Beckstrand - AKG00(1) to Everyone : GAM Sign-In Sheet
<https://www.surveymonkey.com/r/WTMNKRM>

GAM RNS Idea Hub

<https://www.surveymonkey.com/r/WFPVQ2W>

16:02:30 From Aine Mines to Everyone : GAM Sign-In Sheet
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GAM RNS Idea Hub

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16:05:26 From Bob Gladstone to Everyone : nothing in the chat as yet.

16:05:47 From Aine Mines to Everyone : GAM Sign-In Sheet
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16:08:30 From Darren Beckstrand - AKG00(1) to Everyone : GAM Sign-In Sheet
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16:09:46 From douglas.a.anderson to Everyone : I had no problems this afternoon. Thank you Nancy.

16:09:57 From Aine Mines to Everyone : GAM Sign-In Sheet
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16:10:23 From Larry Jones to Nancy Whiting - TRB(Direct Message) : I could not log into MyTRB this morning. Fortunately I was able to join a meeting via the app on my phone.

16:10:54 From Naser Abu-Hejleh to Everyone : Great to join this committee

16:12:04 From Nancy Whiting - TRB to Larry Jones(Direct Message) : Hi Larry, glad you figured a work around. Hopefully we are working out all the kinks so going forward it all goes smoothly.

16:15:59 From Aine Mines to Everyone : Posting these links to sign in and ideas hub one last time for any last arrivals who don't have access to the first part of the chat log.

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<https://www.surveymonkey.com/r/WFPVQ2W>

16:23:33 From Andy Doe, Australian Rail Track Corporation to Everyone : There is a fantastic amount of information on the GAM website, great to see some of those publications publicly available. Congratulations, looks like a lot of work went into getting this up and running

16:28:12 From John Pilipchuk to Everyone : Update on Highway Geology Symposium, We will be virtual in the fall of 2021 (exact dates haven't been set yet). 2022 will hopefully be in person in 2022 in Asheville, North Carolina.

16:30:59 From FishM to Everyone : As requested, we are looking for additional state partners for a pooled fund research project TPF 5-549 "Developing Fragmented Rockfall Models using Physics Engines". For more information contact Marc Fish fishm@wsdot.wa.gov

16:37:22 From Darren Beckstrand - AKG00(1) to Nancy Whiting - TRB(Direct Message) : zac sala will be a presenter

16:40:37 From Nancy Whiting - TRB to Darren Beckstrand - AKG00(1)(Direct Message) : done

16:48:38 From Scott Anderson AKG00(1) Co-Chair to Everyone : Andy Doe, nice presentation. Thanks for joining us. Can you comment more on how the inventory generated through the systematic lidar work compared with inventory held separately by as-builts or other means of in-person recording? Were there false positives or false negatives, etc.?

16:55:26 From Andy Doe, Australian Rail Track Corporation to Everyone : Thank Scott - there were some areas that required a second run of the analysis as they were identified by a visual check as incorrect - a good example was over bridges showing as at grade and interrupting a broader cutting. Unfortunately there was not a coherent system of as builts or in person recording to compare the analysis too. The next phase of the project would be physical inspections of the locations identified as higher risk, with physical inspection and recording - perhaps similar to UK network rail. Being a significant investment (like the 1800 hours that Eric just mentioned), the next phase was delayed

16:57:57 From Naser Abu-Hejleh to Everyone : A New FHWA Report:

Practices of US State DOTs that Showed Progress in Implementation of GAM

16:58:50 From Naser Abu-Hejleh to Everyone : The above report is being developed by Dr. Naser Abu-Hejleh

16:59:06 From Andy Doe, Australian Rail Track Corporation to Everyone : Is the rating system in Douglas/Eric presentation available for public consumption?

16:59:39 From Nicholas Farny to Everyone : Yes it is. <https://usmp.info/client/login.php>

16:59:49 From Nicholas Farny to Everyone : Username level1@gmail.com

16:59:57 From Nicholas Farny to Everyone : password level1

17:00:23 From Nicholas Farny to Everyone : <https://highways.dot.gov/federal-lands/geotechnical/usmp-field-manual>

17:00:46 From Aine Mines to Everyone : Nicholas, you beat me to it!

17:01:00 From Andy Doe, Australian Rail Track Corporation to Everyone : many thanks - much appreciated

17:04:34 From Puppala, Anand Jagadeesh to Everyone : On behalf of AKG00 section, Geology and Geotechnical Engineering, I would like to thank Scott and Darren for their excellent leadership of this committee and its activities. Thank you! Also, Thank you all for joining the session and speakers for excellent talks! Thanks - Anand Puppala (and Erol Tutumuler of UIUC and Nancy Whiting of TRB)!

17:06:56 From Darren Beckstrand - AKG00(1) to Nancy Whiting - TRB(Direct Message) : Matt Lato is the next presenter.

17:08:34 From FishM to Everyone : Zac, WSDOT is interested in what you are doing .

17:10:25 From Michael McDonnell to Everyone : Zac...Connecticut is interested, also a question...many of our rock slopes have moderate to heavy vegetation ... can this system deal with this?

17:11:32 From Zac Sala - BGC Engineering to Everyone : Thanks Marc, I'm always keen to collaborate. By the way, I'm happy to see the rock fall fragmentation and physics engine work is gaining some momentum

17:13:51 From Zac Sala - BGC Engineering to Everyone : Michael, I'd be keen to take a look at some of your vegetated slopes and see how the computer vision labelling goes. Overly vegetated slopes definitely pose a challenge with computer vision methods, as it requires some level of rock to be exposed in the street level photos. One of the benefits of testing in Colorado. Otherwise screening using DEMs generated from lidar may still be the best bet at those slopes, depending on available data, resolution, and slope size

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17:14:45 From Zac Sala - BGC Engineering to Everyone : My email is zsala@bgcengineering.ca for folks interested in getting in touch and having further discussion

17:16:22 From Andy Doe, Australian Rail Track Corporation to Everyone : In the large damage areas I showed in photos, we used change detection to establish the volumes of rock fill we needed for repairing the scours, and the volume of muck we needed to shift off track - was immensely useful as a relatively accurate, quick and safe exercise.

17:25:01 From Marilyn Dodson to Everyone : Matt: this sounds like a translation of BIM to transportation projects? Would you deliver 3D plans electronically rather than traditional plan sets for hopefully better data transfer from design to construction?

17:26:47 From Aine Mines to Everyone : Posting these one last time survey links one last time. Please take a moment to fill them out if you haven't already, and help us keep identify research needs to move forward.

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17:27:30 From Scott Anderson AKG00(1) Co-Chair to Everyone : As we near the end, running late as per normal, there is still time to put research ideas in the chat directly or in the following very brief form:

17:27:36 From Scott Anderson AKG00(1) Co-Chair to Everyone : <https://www.surveymonkey.com/results/SM-KBBSKS757/>

17:27:51 From douglas.a.anderson to Everyone : I must leave for another engagement, but I wanted to acknowledge the great job being done by the committee and presenters. I am always intrigued by the great work and ideas that are being moved forward in this forum. Good bye for now Friends!!! Happy New Year to all.

17:30:01 From Naser Abu-Hejleh to Everyone : A New FHWA Report:

Practices of US State DOTs that Showed Progress in Implementation of GAM
By Dr. Naser Abu-Hejleh

Work Plan:

1. Identified the Leading State DOTs in GAM
2. Survey of GAM Practices that was sent to the Identified State DOTs
3. Developed the Subject Report

17:31:32 From derrick.dasenbrock to Everyone : Thanks for hosting an informative subcommittee meeting- lots of great content/speakers. Compliments to TRB for making the 2021 Annual Meeting virtual- it's great that we have the opportunity for 100+ participants.

17:32:50 From Naser Abu-Hejleh to Everyone : A New FHWA Report:

Practices of US State DOTs that Showed Progress in Implementation of GAM
By Dr. Naser Abu-Hejleh

Work Plan:

1. Identify the Leading State DOTs in GAM
2. Developed Survey of GAM Practices that was sent to the Identified State DOTs
3. Develop the Subject Report

17:33:13 From Scott Anderson AKG00(1) Co-Chair to Everyone : Some people are having to sign off. Sorry for the 'poor' meeting management, but you can see we are making the push for a longer agenda slot in the future! Thanks to all who attended and participated. I am not sure if we get a hard hook, or not.

17:34:22 From Bob Gladstone to Everyone : Great job Scott, Darren and all, especially speakers!

17:35:01 From Zac Sala - BGC Engineering to Everyone : The virtual format for the meeting went quite well. Thanks Darren and Scott for hosting, and thanks for the opportunity to present!

17:35:24 From Jim Higbee to Everyone : Ditto- hats off everyone!

17:36:22 From John Pilipchuk to Everyone : Thanks Scott & Darren!

17:37:28 From Khalid.Mohamed to Everyone : Thanks Scott and Darren for the opportunity to talk and good discussions!

17:37:38 From Vanessa Bateman to Everyone : Thanks!!

17:37:50 From Todd Hansen FHWA CFL to Everyone : Thanks much!